

The **Communicator**

A Publication Of The Surrey Amateur Radio Club



**November
2017**

SARC

November 2017



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The **Communicator** is a publication of the Surrey Amateur Radio Club. It appears monthly, except July and August, for area Amateur Radio operators, to enhance the exchange of information and to promote local ham radio activity.

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Regular readers who are not SARC members are invited to contribute a \$5 annual donation towards our Field Day fund.

SARC maintains a website at www.ve7sar.net and a Digital Communicator at ve7sar.blogspot.ca that includes recent news, past issues of The Communicator, club history, photos, videos and other information.

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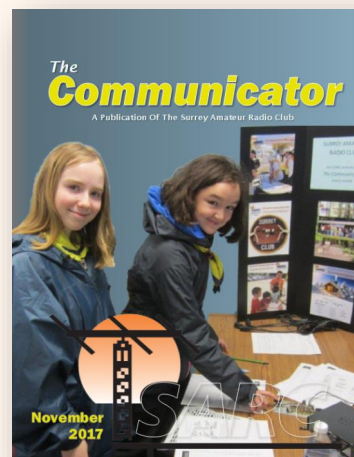


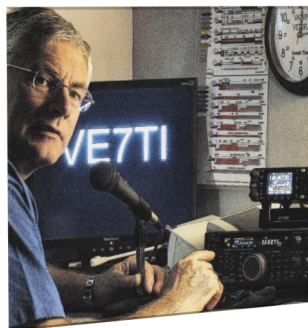
On The November Cover...

October 21st was JOTA day at the OTC. Scouts from the Surrey area visited and experienced Amateur Radio first hand, making contacts far and wide.

Here, two of the young ladies got a feel for the key during an introduction to CW, one of five different stations that they participated in.

More on this story on page 27





QRM

...from the Editor's Shack

*Do you have a photo or bit of club news to share?
An Interesting link?*

*Something to sell or something you are looking for?
eMail it to [communicator @ ve7sar.net](mailto:communicator@ve7sar.net) for inclusion in this publication.*

This past meeting brought three presentations. Dave Thompson VA7THO spoke about the UHF distance record set by himself and an Ohio based station using the International Space Station as the digipeater.

As the Communicator Editor, I presented our new '**Digital Communicator**' which lives at ve7sar.blogspot.ca. Over the past year we have not had a regular webmaster so our website at ve7sar.net has become out of date. It is a known fact that websites that rarely update lose visitors so, after a discussion at the September Directors meeting, I volunteered to take on the task.

It stands to reason that the existing club website retain the basic information that rarely changes. This includes Repeater data, weekly nets, and contact information. It will remain as a landing page. Prominent on that page will be a link to the Digital Communicator site.

If you have already visited, and several hundred visits have already occurred, from five continents, you will find the latest news, from not only our club, but stories of general Amateur Radio interest, particularly if they have a local angle. You will also find all of the issues of our popular Communicator newsletter going as far back as 2010.

The Communicator accounts for most of our visits.

The page is laid out in a manner that searching for past content may be done in several ways. In a search box you may enter a key word, for example 'foxhunt'; or a visitor can click on one of several defined labels. These include Communicator, Antennas, Field Day, etc. Finally, all content is indexed by date so, you can click on a year or month to find it. There is a translate field at the bottom that will convert the content into a choice of foreign languages.

I often receive email from visitors who wish to receive the Communicator by mail. They can now enter their address in the 'subscribe' box to automatically receive updates.

Let me know what you think. As always, your suggestions are welcomed at communicator@ve7sar.net

The final presentation was from Stan VA7NF. He has been working out the details of having our new Flex radio communicate via the Internet so that our members can operate via their browser from any location. It's a work in progress and we will keep you posted.

~ John VE7TI

On the Web

ve7sar.net

Between newsletters, watch your e-mail for news, announcements of Amateur Radio events, monthly meetings and training opportunities.

Click the links below to follow our presence on the web:

SARC Blog

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If you run from technology, it will chase you. ~Robert M. Pirsig

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The Rest Of The Story...

Lee De Forest

Father of Radio, Grandfather of Television



Lee de Forest (August 26, 1873 - June 30, 1961) was an American inventor, self-described "Father of Radio", and a pioneer in the development of sound-on-film recording used for motion pictures. He had over 180 patents, but also a tumultuous career—he boasted that he made, then lost, four fortunes.

Lee de Forest was born in Council Bluffs, Iowa, the son of Anna Margaret (née Robbins) and Henry Swift DeForest. He was a direct descendant of Jessé de Forest, the leader of a group of Walloon Huguenots who fled Europe in the 17th Century due to religious persecution.

De Forest prepared for college by attending Mount Hermon Boys' School in Mount Hermon, Massachusetts for two years, beginning in 1891. In 1893, he enrolled in a three-year course of studies at Yale University's Sheffield Scientific School in New Haven, Connecticut, on a \$300 per year scholarship that had been established for relatives of David de Forest. Convinced that he was destined to become a famous—and rich—inventor, and perpetually short of funds, he sought to interest companies with a series of devices and puzzles he created, and expectantly submitted essays in prize competitions, all with little success.

After completing his undergraduate studies, in September, 1896 de Forest began three years of postgraduate work. However, his electrical experiments had a tendency to blow fuses, causing building-wide blackouts. Even after being warned to be more careful, he managed to douse the lights during an important lecture by Professor Charles Hastings, who responded by having de Forest expelled from Sheffield.

With the outbreak of the Spanish-American War in 1898, de Forest enrolled in the Connecticut Volunteer Militia Battery as a

bugler, but the war ended and he was mustered out without ever leaving the state. He then completed his studies at Yale's Sloane Physics Laboratory, earning a Doctorate in 1899 with a dissertation on the "Reflection of Hertzian Waves from the Ends of Parallel Wires", supervised by theoretical physicist Willard Gibbs.

De Forest was convinced there was a great future in radiotelegraphic communication (then known as "wireless telegraphy"), but Italian Guglielmo Marconi, who received his first patent in 1896, was already making impressive progress in both Europe and the United States. One drawback to Marconi's approach was his use of a coherer as a receiver, which, while providing for permanent records, was also slow (after each received Morse code dot or dash, it had to be tapped to restore operation), insensitive, and not very reliable. De Forest was determined to devise a better system, including a self-restoring detector that could receive transmissions by ear, thus making it capable of receiving weaker signals and also allowing faster Morse code sending speeds.

After making unsuccessful inquiries about employment with Nikola Tesla and Marconi, de Forest struck out on his own. His first job after leaving Yale was with the Western Electric Company's telephone lab in Chicago, Illinois. While there he developed his first receiver, which was based on findings by two German scientists, Drs. A. Neugschwender and Emil Aschkinass. Their original design consisted of a mirror in which a narrow, moistened slit had been cut through the silvered back. Attaching a battery and telephone receiver, they could hear sound changes in response to radio signal impulses. De Forest, along with Ed Smythe, a co-worker who provided financial and technical help, developed variations they called "responders".



...de Forest has been called one of the founders of the "electronic age"

A series of short-term positions followed, including three unproductive months with Professor Warren S. Johnson's American Wireless Telegraph Company in Milwaukee, Wisconsin, and work as an assistant editor of the *Western Electrician* in Chicago. With radio research his main priority, de Forest next took a night teaching position at the Lewis Institute, which freed him to conduct experiments at the Armour Institute. By 1900, using a spark-coil transmitter and his responder receiver, de Forest expanded his transmitting range to about seven kilometers (four miles). Professor Clarence Freeman of the Armour Institute became interested in de Forest's work and developed a new type of spark transmitter.

De Forest soon felt that Smythe and Freeman were holding him back, so in the fall of 1901 he made the bold decision to go to New York to compete directly with Marconi in transmitting race results for the International Yacht races. The race effort turned out to be an almost total failure. The Freeman transmitter broke down — in a fit of rage, de Forest threw it overboard — and had to be replaced by an ordinary spark coil. Even worse, the American Wireless Telephone and Telegraph Company, which claimed its ownership of Amos Dolbear's 1886 patent for wireless communication meant it held a monopoly for all wireless communication in the United States, had also set up a powerful transmitter. None of these companies had effective tuning for their transmitters, so only one could transmit at a time without causing mutual interference. Although an attempt was made to have the three systems avoid conflicts by rotating operations over five-minute intervals, the agreement broke down, resulting in chaos as the simultaneous transmissions clashed with each other. De Forest ruefully noted that under these conditions the only successful "wireless" communication was done by visual semaphore "wig-wag" flags. (The 1903 International Yacht races would be a repeat of 1901 — Marconi worked for the Associated Press, de Forest for the Publishers' Press Association, and the unaffiliated International Wireless Company (successor to 1901's American Wireless Telephone and Telegraph) operated a high-powered transmitter that was used primarily to drown out the other two.)

American De Forest Wireless Telegraph Company

Despite this setback, de Forest remained in the New York City area, in order to raise interest in his ideas and capital to replace the small working companies that had been formed to promote his work thus far. In January, 1902 he met a promoter, Abraham White, who would become de Forest's main sponsor for the next five years. White envisioned bold and expansive plans that enticed the inventor — however, he was

also dishonest and much of the new enterprise would be built on wild exaggeration and stock fraud. To back de Forest's efforts, White incorporated the American DeForest Wireless Telegraph Company, with himself as the company's president, and de Forest the Scientific Director. The company claimed as its goal the development of "world-wide wireless".

The original "responder" receiver (also known as the "goo anti-coherer") proved to be too crude to be commercialized, and de Forest struggled to develop a non-infringing device for receiving radio signals. In 1903, Reginald Fessenden demonstrated an electrolytic detector, and de Forest developed a variation, which he called the "spade detector", claiming it did not infringe on Fessenden's patents. Fessenden, and the U.S. courts, did not agree, and court injunctions enjoined American De Forest from using the device.

Meanwhile, White set in motion a series of highly visible promotions for American DeForest: "Wireless Auto No. 1" was positioned on Wall Street to "send stock quotes" using an un-muffled spark transmitter to loudly draw the attention of potential investors, in early 1904 two stations were established at Wei-hai-Wei on the Chinese mainland and aboard the Chinese steamer SS Haimun, which allowed war correspondent Captain Lionel James of The Times of London to report on the brewing Russo-Japanese War, and later that year a tower, with "DEFOREST" arrayed in lights, was erected on the grounds of the Louisiana Purchase Exposition in Saint Louis, Missouri, where the company won a gold medal for its radiotelegraph demonstrations. (Marconi withdrew from the Exposition when he learned de Forest would be there).

The company's most important early contract was the construction, in 1905-1906, of five high-powered radiotelegraph stations for the U.S. Navy, located in Panama, Pensacola and Key West, Florida, Guantanamo, Cuba, and Puerto Rico. It also installed shore stations along the Atlantic Coast and Great Lakes, and equipped shipboard stations. But the main focus was selling stock at ever more inflated prices, spurred by the construction of promotional inland stations. Most of these inland stations had no practical use and were abandoned once the local stock sales slowed.

De Forest eventually came into conflict with his company's management. His main complaint was the limited support he got for conducting research, while company officials were upset with de Forest's inability to develop a practical receiver free of patent infringement. (This problem was finally resolved with the invention of the carborundum crystal detector by another company employee, General H. H.

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Dunworthy). On November 28, 1906, in exchange for \$1,000 (half of which was claimed by an attorney) and the rights to some early Audion detector patents, de Forest turned in his stock and resigned from the company that bore his name. American DeForest was then reorganized as the United Wireless Telegraph Company, and would be the dominant U.S. radio communications firm, albeit propped up by massive stock fraud, until its bankruptcy in 1912.

Radio Telephone Company

De Forest moved quickly to re-establish himself as an independent inventor, working in his own laboratory in the Parker Building in New York City. The Radio Telephone Company was incorporated in order to promote his inventions, with James Dunlop Smith, a former American DeForest salesman, as president, and de Forest the vice president. (De Forest preferred the term "radio", which up to now had been primarily used in Europe, over "wireless".)

Arc Radiotelephone Development

At the 1904 Louisiana Purchase Exposition, Valdemar Poulsen had presented a paper on an arc transmitter, which, unlike the discontinuous pulses produced by spark transmitters, created steady "continuous wave" signals that could be used for amplitude modulated (AM) audio transmissions. Although Poulsen had patented his invention, de Forest claimed to have come up with a variation that allowed him to avoid infringing on Poulsen's work. Using his "sparkless" arc transmitter, de Forest first transmitted audio across a lab room on December 31, 1906, and by February was making experimental transmissions, including music produced by Thaddeus Cahill's telharmonium, that were heard throughout the city.

On July 18, 1907, de Forest made the first ship-to-shore transmissions by radiotelephone — race reports for the Annual Inter-Lakes Yachting Association (I-LYA) Regatta held on Lake Erie — which were sent from the steam yacht *Thelma* to his assistant, Frank E. Butler, located in the Fox's Dock Pavilion on South Bass Island. De Forest also interested the U.S. Navy in his radiotelephone, which placed a rush order to have 26 arc sets installed for its Great White Fleet around-the-world voyage that began in late 1907. However, at the conclusion of the circumnavigation the sets were declared to be too unreliable to meet the Navy's needs and removed.

The company set up a network of radiotelephone stations along the Atlantic coast and the Great Lakes, for coastal ship navigation. However, the installations proved unprofitable, and by 1911 the parent company and its subsidiaries were on the brink of bankruptcy.

Initial Broadcasting Experiments

De Forest also used the arc-transmitter to conduct some of the earliest experimental entertainment radio broadcasts. Eugenia Farrar sang "I Love You Truly" in an unpublicized test from his laboratory in 1907, and in 1908, on de Forest's Paris honeymoon, musical selections were broadcast from the Eiffel Tower as a part of demonstrations of the arc-transmitter. In early 1909, in what may have been the first public speech by radio, de Forest's mother-in-law, Harriot Stanton Blatch, made a broadcast supporting women's suffrage.

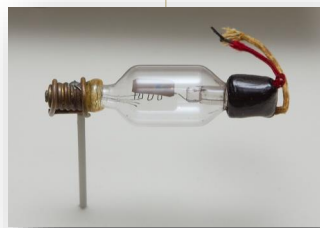
More ambitious demonstrations followed. A series of tests in conjunction with the Metropolitan Opera House in New York City were conducted to determine whether it was practical to broadcast opera performances live from the stage. Tosca was performed on January 12, 1910, and the next day's test included Italian tenor Enrico Caruso. On February 24, the Manhattan Opera Company's Mme. Mariette Mazarin sang "La Habanera" from *Carmen* over a transmitter located in De Forest's lab. But these tests showed that the idea was not yet technically feasible, and de Forest would not make any additional entertainment broadcasts until late 1916, when more capable vacuum-tube equipment became available.

"Grid" Audion Detector

De Forest's most famous invention was the "grid Audion", which was the first successful three-element (triode) vacuum tube, and the first device which could amplify electrical signals. He traced its inspiration to 1900, when, experimenting with a spark-gap transmitter, he briefly thought that the flickering of a nearby gas flame might be in response to electromagnetic pulses. With further tests he soon determined that the

cause of the flame fluctuations actually was due to air pressure changes produced by the loud sound of the spark. Still, he was intrigued by the idea that, properly configured, it might be possible to use a flame or something similar to detect radio signals.

After determining that an open flame was too susceptible to ambient air currents, de Forest



*De Forest grid Audion
from 1906.*

investigated whether ionized gases, heated and enclosed in a partially evacuated glass tube, could be used instead. In 1905 to 1906 he developed various configurations of glass-tube devices, which he gave the general name of "Audions". The first Audions had only two electrodes, and on October 25, 1906, de Forest filed a patent for diode vacuum tube detector, that was granted U.S. patent number 841387 on January 15, 1907. Subsequently, a third "control" electrode was added, originally as a surrounding metal cylinder or a wire coiled around the outside of the glass tube. None of these initial designs worked particularly well. De Forest gave a presentation of his work to date to the October 26, 1906 New York meeting of the American Institute of Electrical Engineers, which was reprinted in two parts in late 1907 in the Scientific American Supplement. He was insistent that a small amount of residual gas was necessary for the tubes to operate properly. However, he also admitted that "I have arrived as yet at no completely satisfactory theory as to the exact means by which the high-frequency oscillations affect so markedly the behavior of an ionized gas."

In late 1906, de Forest made a breakthrough when he reconfigured the control electrode, changing it from outside the glass to a zig-zag wire inside the tube, positioned in the center between the cathode "filament" and the anode "plate" electrodes. He reportedly called the zig-zag control wire a "grid" due to its similarity to the "gridiron" lines on American football playing fields. Experiments conducted with his assistant, John V. L. Hogan, convinced him that he had discovered an important new radio detector, and he quickly prepared a patent application which was filed on January 29, 1907, and received U.S. patent number 879,532 on February 18, 1908. Because the grid-control Audion was the only configuration to become commercially valuable, the earlier versions were forgotten, and the term "Audion" later became synonymous with just the grid type. It later also became known as the triode.

The grid Audion was the first device to amplify, albeit only slightly, the strength of received radio signals. However, to many observers it appeared that de Forest had done nothing more than add the grid electrode to an existing detector configuration, the Fleming valve, which also consisted of a filament and plate enclosed in an evacuated glass tube. De Forest passionately denied the similarity of the two devices, claiming his invention was a relay that amplified currents, while the Fleming valve was merely a rectifier that converted alternating current to direct current. (For this reason, de Forest objected to his Audion being referred to as "a

valve".) The U.S. courts were not convinced, and ruled that the grid Audion did in fact infringe on the Fleming valve patent, now held by Marconi. On the other hand, Marconi admitted that the addition of the third electrode was a patentable improvement, and the two sides agreed to license each other so that both could manufacture three-electrode tubes in the United States. (De Forest's European patents had lapsed because he did not have the funds needed to renew them).

Because of its limited uses and the great variability in the quality of individual units, the grid Audion would be rarely used during the first half-decade after its invention. In 1908, John V. L. Hogan reported that "The Audion is capable of being developed into a really efficient detector, but in its present forms is quite unreliable and entirely too complex to be properly handled by the usual wireless operator."

Employment at Federal Telegraph

California Historical Landmark No. 836, located at the eastern corner of Channing Street and Emerson Avenue in Palo Alto, California, stands at the former location of the Federal Telegraph laboratory, and references Lee de Forest's development there, in 1911-1913, of "the first vacuum-tube amplifier and oscillator".

In May 1910, the Radio Telephone Company and its subsidiaries were reorganized as the North American Wireless Corporation, but financial difficulties meant that the company's activities had nearly come to a halt. De Forest moved to San Francisco, California, and in early 1911 took a research job at the Federal Telegraph Company, which

Audion advertisement, Electrical Experimenter magazine, 1916

THE DE FOREST AUDION

"There is only one Audion—the De Forest"



THE GENUINE DE FOREST TUBULAR AUDION

Is sold separately to any amateur who prefers to build his own Audion.

Price \$5.50

Adaptor 40 cents extra.

Get the Bulletin (X16)



THE TYPE R-J DE FOREST AUDION DETECTOR

Incorporates the Audion Bulb and the genuine De Forest patented circuit with the most approved accessories needed to form a complete detector.

The most popular Audion Detector ever offered. **Price \$14.00**

Get the Bulletin (M16)

MOST SENSITIVE

The Bulletin of the U. S. Bureau of Standards states that the De Forest Audion is fully 50 per cent. more sensitive than any other known form of detector (Vol. 6, No. 4, page 540).

MOST RELIABLE

It is not affected by mechanical vibration nor burned out by static or the transmitting spark. It never fails at the critical moment. The detector is the heart of the receiving set. Why waste valuable time on an insensitive, unreliable detector? The genuine De Forest Audion is now within the means of every operator.

WARNING—You are entitled to the genuine Audion, guaranteed by the owners of the Audion patents, when making an investment of this kind. Any unwarmed detector having a filament, a grid and a plate, as well as other types, are covered by our patents, and several irresponsible infringers are being prosecuted. To be safe and get full value for your money, insist on the genuine De Forest Audion.

SEND FOR BULLETINS X16 AND M16 DESCRIBING AUDION

Detectors, Audion Amplifiers and Audion Receiving Cabinets

DE FOREST RADIO TELEPHONE & TELEGRAPH CO.

101 PARK AVENUE NEW YORK, N. Y.

Makers of the Highest Grade Receiving Equipment in the World

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produced long-range radiotelegraph systems using high-powered Poulsen arcs.

Audio Frequency Amplification

One of de Forest's areas of research at Federal Telegraph was improving the reception of signals, and he came up with the idea of strengthening the audio frequency output from a grid Audion by feeding it into a second tube for additional amplification. He called this a "cascade amplifier", which eventually consisted of chaining together up to three Audions.

At this time the American Telephone and Telegraph Company was researching ways to amplify telephone signals to provide better long-distance service, and it was recognized that de Forest's device had potential as a telephone line repeater. In mid-1912 an associate, John Stone, contacted AT&T to arrange for de Forest to demonstrate his invention. It was found that de Forest's "gassy" version of the Audion could not handle even the relatively low voltages used by telephone lines. (Due to the way he constructed the tubes, de Forest's Audions would cease to operate with too high a vacuum.) However, careful research by Dr. Harold D. Arnold and his team at AT&T's Western Electric subsidiary determined that by improving the tube's design, it could be more fully evacuated, and the high vacuum allowed it to successfully operate at telephone line voltages. With these changes the Audion evolved into a modern electron-discharge vacuum tube, using electron flows rather than ions. (Dr. Irving Langmuir at the General Electric Corporation made similar findings, and both he and Arnold attempted to patent the "high vacuum" construction, but the U.S. Supreme Court ruled in 1931 that this modification could not be patented).

After a delay of ten months, in July, 1913 AT&T, through a third party who disguised his link to the telephone company, purchased the wire rights to seven Audion patents for \$50,000. De Forest had hoped for a higher payment, but was again in bad financial shape and was unable to bargain for more. In 1915, AT&T used the innovation to conduct the first transcontinental telephone calls, in conjunction with the Panama-Pacific International Exposition at San Francisco.

Radio Telephone Company officials had engaged in some of the same stock selling excesses that had taken place at American DeForest, and as part of the U.S. government's crackdown on stock fraud, in March, 1912 de Forest, plus four other company officials, were arrested and charged with "use of the mails to defraud". Their trials took place in late

1913, and while three of the defendants were found guilty, de Forest was acquitted. With the legal problems behind him, de Forest reorganized his company as the DeForest Radio Telephone Company, and established a laboratory at 1391 Sedgewick Avenue in the Highbridge section of the Bronx in New York City. The company's limited finances were boosted by the sale, in October 1914, of the commercial Audion patent rights for radio signalling to AT&T for \$90,000, with de Forest retaining the rights for sales for "amateur and experimental use". In October, 1915 AT&T conducted test radio transmissions from the Navy's station in Arlington, Virginia that were heard as far away as Paris and Hawaii.

The Radio Telephone Company began selling "Oscillion" power tubes to amateurs, suitable for radio transmissions. The company wanted to keep a tight hold on the tube business, and originally maintained a policy that retailers had to require their customers to return a worn-out tube before they could get a replacement. This style of business encouraged others to make and sell unlicensed vacuum tubes which did not impose a return policy. One of the boldest was Audiotron Sales Company founded in 1915 by Elmer T. Cunningham of San Francisco, whose Audiotron tubes cost less but were of equal or higher quality. The de Forest company sued Audiotron Sales, eventually settling out of court.

In April, 1917, the company's remaining commercial radio patent rights were sold to AT&T's Western Electric subsidiary for \$250,000. During World War I, the Radio Telephone Company prospered from sales of radio equipment to the military. However, it also became known for the poor quality of its vacuum tubes, especially compared to those produced by major industrial manufacturers such as General Electric and Western Electric.

The Regeneration Controversy

Beginning in 1912 there was increased investigation of vacuum-tube capabilities, simultaneously by numerous inventors in multiple countries, who identified additional important uses for the device. These overlapping discoveries led to complicated legal disputes over priority, perhaps the most bitter being one in the United States between de Forest and Edwin Howard Armstrong over the discovery of regeneration (also known as the "feedback circuit" and, by de Forest, as the "ultra-audion").

Beginning in 1913 Armstrong prepared papers and gave demonstrations that comprehensively documented how to employ three-element vacuum tubes in circuits that amplified signals to stronger

levels than previously thought possible, and that could also generate high-power oscillations usable for radio transmission. In late 1913 Armstrong applied for patents covering the regenerative circuit, and on October 6, 1914 U.S. patent 1,113,149 was issued for his discovery.

U.S. patent law included a provision for challenging grants if another inventor could prove prior discovery. With an eye to increasing the value of the patent portfolio that would be sold to Western Electric in 1917, beginning in 1915 de Forest filed a series of patent applications that largely copied Armstrong's claims, in the hopes of having the priority of the competing applications upheld by an interference hearing at the patent office. Based on a notebook entry recorded at the time, de Forest asserted that, while working on the cascade amplifier, he had stumbled on August 6, 1912 across the feedback principle, which was then used in the spring of 1913 to operate a low-powered transmitter for heterodyne reception of Federal Telegraph arc transmissions. However, there was also strong evidence that de Forest was unaware of the full significance of this discovery, as shown by his lack of follow-up and continuing misunderstanding of the physics involved. In particular, it appeared that he was unaware of the potential for further development until he became familiar with Armstrong's research. De Forest was not alone in the interference determination — the patent office identified four competing claimants for its hearings, consisting of Armstrong, de Forest, General Electric's Langmuir, and a German, Alexander Meissner, whose application would be seized by the Office of Alien Property Custodian during World War I.

The subsequent legal proceedings become divided between two groups of court cases. On May 17, 1921 the court ruled that the lack of awareness and understanding on de Forest's part, in addition to the fact that he had made no immediate advances beyond his initial observation, made implausible his attempt to prevail as inventor.

However, a second series of court cases, which were the result of the patent office interference proceeding, had a different outcome. The interference board had also sided with Armstrong, and de Forest appealed its decision to the District of Columbia district court. On May 8, 1924, that court concluded that the evidence, beginning with the 1912 notebook entry, was sufficient to establish de Forest's priority. Now on the defensive, Armstrong's side tried to overturn the decision, but these efforts, which twice went before the U.S. Supreme Court, in 1928 and 1934, were unsuccessful.

This judicial ruling meant that Lee de Forest was now legally recognized in the United States as the inventor of regeneration. However, much of the engineering community continued to consider Armstrong to be the actual developer, with de Forest viewed as someone who skillfully used the patent system to get credit for an invention to which he had barely contributed. Following

the 1934 Supreme Court decision, Armstrong attempted to return his Institute of Radio Engineers (present-day Institute of Electrical and Electronics Engineers) Medal of Honor, which had been awarded to him in 1917 "in recognition of his work and publications dealing with the action of the oscillating and non-oscillating audion", but the organization's board refused to let him, stating that it "strongly affirms the original award". The practical effect of de Forest's victory was that his company was free to sell products that used regeneration, for during the controversy, which became more a personal feud than a business dispute, Armstrong tried to block the company from even being licensed to sell equipment under his patent.

De Forest regularly responded to articles which he thought exaggerated Armstrong's contributions, with animosity that continued even after Armstrong's 1954 suicide. Following the publication of Carl Dreher's "E. H. Armstrong, the Hero as Inventor" in the August, 1956 Harper's magazine, de Forest wrote the author, describing Armstrong as "exceedingly arrogant, brow beating, even brutal...", and defending the Supreme Court decision in his favor.

Renewed Broadcasting Activities

In the summer of 1915, the company received an Experimental license for station 2XG, located at its Highbridge laboratory. In late 1916, de Forest renewed the entertainment broadcasts he had suspended in 1910, now using the superior capabilities of vacuum-tube equipment. 2XG's debut program aired on October 26, 1916, as part of an arrangement with the Columbia Graphophone Company to promote its recordings, which included "announcing the title and 'Columbia Gramophone Company' with each playing". Beginning November 1, the "Highbridge Station" offered a nightly schedule featuring the Columbia recordings.

These broadcasts were also used to advertise "the products of the DeForest Radio Co., mostly the radio parts, with all the zeal of our catalogue and price list", until comments by Western Electric engineers caused de Forest enough embarrassment to make him decide to eliminate the direct advertising. The station also made the first audio broadcast of election reports — in earlier elections, stations that broadcast results had used Morse code — providing news of the November 1916 Wilson-Hughes presidential election. The New York

February 24, 1910 radio broadcast by Mme. Mariette .



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American installed a private wire, and bulletins were sent out every hour. About 2,000 listeners heard The Star-Spangled Banner and other anthems, songs, and hymns.

With the entry of the United States into World War I on April 6, 1917, all civilian radio stations were ordered to shut down, so 2XG was silenced for the duration of the war. The ban on civilian stations was lifted on October 1, 1919, and 2XG soon renewed operation, with the Brunswick-Balke-Collender company now supplying the phonograph records. In early 1920, de Forest moved the station's transmitter from the Bronx to Manhattan, but did not have permission to do so, so district Radio Inspector Arthur Batcheller ordered the station off the air. De Forest's response was to return to San Francisco in March, taking 2XG's transmitter with him. A new station, 6XC, was established as "The California Theater station", which de Forest later stated was the "first radio-telephone station devoted solely" to broadcasting to the public.

Later that year a de Forest associate, Clarence "C.S." Thompson, established Radio News & Music, Inc., in order to lease de Forest radio transmitters to newspapers interested in setting up their own broadcasting stations. In August, 1920, The Detroit News began operation of "The Detroit News Radiophone", initially with the callsign 8MK, which later became broadcasting station WWJ.

Phonofilm Sound-on-film Process

In 1921 de Forest ended most of his radio research in order to concentrate on developing an optical sound-on-film process called Phonofilm. In 1919 he filed the first patent for the new system, which improved upon earlier work by Finnish inventor Eric Tigerstedt and the German partnership Tri-Ergon. Phonofilm recorded the electrical waveforms produced by a microphone photographically onto film, using parallel lines of variable shades of gray, an approach known as "variable density", in contrast to "variable area" systems used by processes such as RCA Photophone. When the movie film was projected, the recorded information was converted back into sound, in synchronization with the picture.

From October 1921 to September 1922, de Forest lived in Berlin, Germany, meeting the Tri-Ergon developers (German inventors Josef Engl (1893-1942), Hans Vogt (1890-1979), and Joseph Massolle (1889-1957)) and investigating other European sound film systems. In April 1922 he

announced that he would soon have a workable sound-on-film system. On March 12, 1923 he demonstrated Phonofilm to the press; this was followed on April 12, 1923 by a private demonstration to electrical engineers at the Engineering Society Building's Auditorium at 33 West 39th Street in New York City.

In November 1922, de Forest established the De Forest Phonofilm Company, located at 314 East 48th Street in New York City. But none of the Hollywood movie studios expressed interest in his invention, and because at this time these studios controlled all the major theater chains, this meant de Forest was limited to showing his films in independent theaters. The Phonofilm Company would file for bankruptcy in September 1926.

After recording stage performances (such as in vaudeville), speeches, and musical acts, on April 15, 1923 de Forest premiered 18 Phonofilm short films at the independent Rivoli Theater in New York City. Starting in May 1924, Max and Dave Fleischer used the Phonofilm process for their Song Car-Tune series of cartoons—featuring the "Follow the Bouncing Ball" gimmick. However, de Forest's choice of primarily filming short vaudeville acts, instead of full-length features, limited the appeal of Phonofilm to Hollywood studios.

De Forest also worked with Freeman Harrison Owens and Theodore Case, using their work to perfect the Phonofilm system. However, de Forest had a falling out with both men. Due to de Forest's continuing misuse of Theodore Case's inventions and failure to publicly acknowledge Case's contributions, the Case Research Laboratory proceeded to build its own camera. That camera was used by Case and his colleague Earl Sponable to record President Coolidge on August 11, 1924, which was one of the films shown by de Forest and claimed by him to be the product of "his" inventions.

Believing that de Forest was more concerned with his own fame and recognition than he was with actually creating a workable system of sound film, and because of his continuing attempts to downplay the contributions of the Case Research Laboratory in the creation of Phonofilm, Case severed his ties with de Forest in the fall of 1925. Case successfully negotiated an agreement to use his patents with studio head William Fox, owner of Fox Film Corporation, who marketed the innovation as Fox Movietone. Warner Brothers introduced a competing method for sound film, the Vitaphone sound-on-disc

process developed by Western Electric, with the August 6, 1926 release of the John Barrymore film Don Juan.

In 1927 and 1928, Hollywood expanded its use of sound-on-film systems, including Fox Movietone and RCA Photophone. Meanwhile, theater chain owner Isadore Schlesinger purchased the UK rights to Phonofilm and released short films of British music hall performers from September 1926 to May 1929. Almost 200 Phonofilm shorts were made, and many are preserved in the collections of the Library of Congress and the British Film Institute.

Later Years

In April 1923, the De Forest Radio Telephone & Telegraph Company, which manufactured de Forest's Audions for commercial use, was sold to a group headed by Edward Jewett of Jewett-Paige Motors, which expanded the company's factory to cope with rising demand for radios. The sale also bought the services of de Forest, who was focusing his attention on newer innovations. De Forest's finances were badly hurt by the stock market crash of 1929, and research in mechanical television proved unprofitable. In 1934, he established a small shop to produce diathermy machines, and, in a 1942 interview, still hoped "to make at least one more great invention".

De Forest was a vocal critic of many of the developments in the entertainment side of the radio industry. In 1940 he sent an open letter to the National Association of Broadcasters in which he demanded: "What have you done with my child, the radio broadcast? You have debased this child, dressed him in rags of ragtime, tatters of jive and boogie-woogie." That same year, de Forest and early TV engineer Ulises Armand Sanabria presented the concept of a primitive unmanned combat air vehicle using a television camera and a jam-resistant radio control in a Popular Mechanics issue. In 1950 his autobiography, Father of Radio, was published, although it sold poorly.

De Forest was the guest celebrity on the May 22, 1957, episode of the television show This Is Your Life, where he was introduced as "the father of radio and the grandfather of television". He suffered a severe heart attack in 1958, after which he remained mostly bedridden. He died in Hollywood on June 30, 1961, aged 87, and was interred in San Fernando Mission Cemetery in Los Angeles, California. De Forest died relatively poor, with just \$1,250 in his bank account



Canada 150 and VE7RAC

Here is the schedule for use of the VE7RAC callsign for the Canada 150 Award. You can reserve a day or more for a mode you choose to work by contacting Fred Orsetti ve7io@telus.net

2017		November				
MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY
30 0	31 0	01 VA7DP SSB;	02 VA7DP SSB;	03 VA7DP SSB;	04 0	05 VA7JW - SSB only: VE7FO - RTTY, CW
06 VA7JW - SSB only: VE7FO - RTTY, CW	07 VA7JW - SSB only: VE7FO - RTTY, CW	08 VA7JW - SSB only: VE7FO - RTTY, CW	09 VA7JW - SSB only: VE7FO - RTTY, CW	10 VA7JW - SSB only: VE7FO - RTTY, CW	11 VA7JW - SSB only: VE7FO - RTTY, CW	12 VE7JKZ - CW ONLY
13 VE7JKZ - CW ONLY	14 VE7JKZ - CW ONLY: VE7JT SSB 0900 - 1300	15 VE7JKZ - CW ONLY	16 VE7JKZ - CW ONLY	17 VE7JKZ - CW ONLY	18 VE7JKZ - CW ONLY	19 0
20 0	21 0	22 0	23 0	24 0	25 0	26 0
27 0	28 0	29 0	30 0	01 0	02 0	03 0

Current members will be removed from our mailing list if 2017-2018 dues are not paid by November 1st

November 2017

November 2017

Sun	Mon	Tue	Wed	Thu	Fri	Sat
For details on all SARC events, go to ve7sar.net For details on all SEPARS events, go to separ.shutterfly.com/calendar			1	2	3	4 0900 Klub Koffee Klatch: Kalmar Family Restaurant CONTEST: ARRL Sweepstakes (CW)
5 Maple Ridge Swap Meet CONTEST: ARRL Sweepstakes (CW)	6	7 1930 SEPAR Net 2000 SARC Net	8 1900 SARC Monthly General Meeting	9	10	11 Remembrance Day 0900 Klub Koffee Klatch: Kalmar Family Restaurant CONTEST: CQ WAE Dx (RTTY)
12 CONTEST: CQ WAE Dx (RTTY) SEMINAR: 'Discover Amateur Radio' seminar—Richmond	13	14 1930 SEPAR Net 2000 SARC Net	15	16	17	18 0900 Klub Koffee Klatch: Kalmar Family Restaurant CONTEST: ARRL Sweepstakes (SSB)
19 CONTEST: ARRL Sweepstakes (SSB)	20	21 1930 SEPAR Net 2000 SARC Net	22 SARC Exec Meeting	23	24	25 0900 Klub Koffee Klatch: Kalmar Family Restaurant CONTEST: CQ WW Dx (CW)
26 CONTEST: CQ WW Dx (CW)	27	28 1930 SEPAR Net 2000 SARC Net	29	30		

Contest Details: <http://hornucopia.com/contestcal/contestcal.html>



Page 13—News You Can Lose

The Lighter Side of Amateur Radio

New NRRL Communications Specialist Makes Mark

A Ham Hijinks staff report

NEWINGSTEAD, VT — The new overseer of communications coming out of the National Radio Retransmission Legion (NRRL) is making significant changes, just hours after taking his post.

Davis Gerr's first action will be controlling expenses. "Subscriptions are down and we just can't afford 73 anymore," said Gerr. The effort will be a multi-stage strategy. "We will use 72 immediately. If this budget trend continues, we will reduce to 57 and then 24 until things rebound."

While researching amateur radio prior to interviewing for the job, Gerr noticed other cost-savings opportunities as he listened to transmissions on a store-bought handheld shortwave receiver. "We certainly won't say '72s' as if it's plural. We'll do more with less and use the singular version going forward."

NRRL members can expect to see emails, bulletins and code practices sign off with "72" beginning this weekend.

-Ham Hijinks

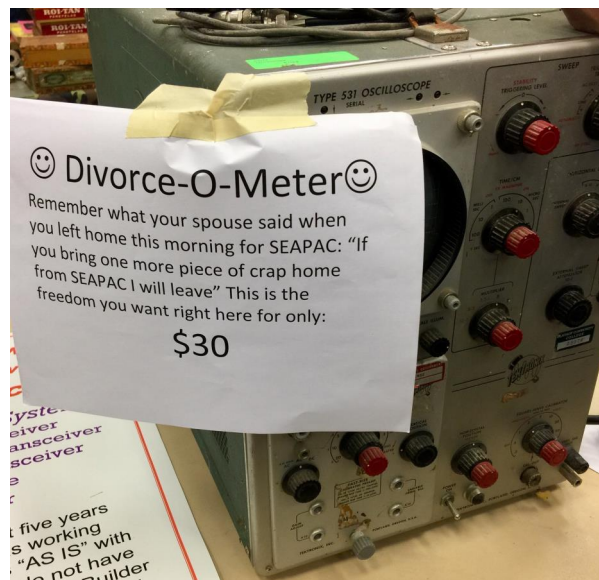


SUCH A HAM

SH-005



Stan & Cliff have been working all day on installing my clothesline, Mary.



November 2017



Back to Basics

John Schouten VE7TI

From The Basic Question Bank

Two of several Basic Question Bank Reactance questions this month.

B-005-010-001

How does a coil react to AC?

1. As the frequency of the applied AC increases, the reactance increases
2. As the amplitude of the applied AC increases, the reactance decreases
3. As the amplitude of the applied AC increases, the reactance increases
4. As the frequency of the applied AC increases, the reactance decreases

B-005-010-002

How does a capacitor react to AC?

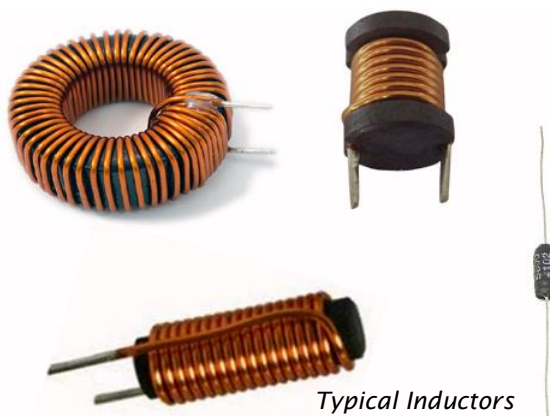
1. As the frequency of the applied AC increases, the reactance decreases
2. As the frequency of the applied AC increases, the reactance increases
3. As the amplitude of the applied AC increases, the reactance increases
4. As the amplitude of the applied AC increases, the reactance decreases

There are a couple of questions in the Basic question bank that refer to Reactance and Impedance. Reactance, Impedance and Resonance are often confusing to the beginner. They are related and we will look at Impedance in another article, but for now let's explore Reactance.

There are two flavours of reactance, capacitive and inductive. It stands to reason that capacitive reactance relates to capacitors and... yes, inductive capacitance to inductors. You recall that Resistance is the opposition to the flow of electrons in a material when a DC voltage is applied.

Inductive Reactance

When an alternating or AC voltage (audio and RF have a frequency and are therefore AC) is applied across an inductor (a coil), the flow of current through it behaves very differently to that of an applied DC voltage. In an AC circuit, the opposition to current flow through the coils windings not only depends upon the inductance of the coil but also the frequency of the AC waveform.



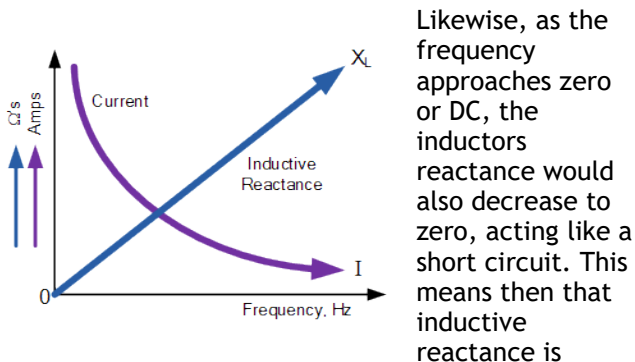
Typical Inductors

The opposition to current flowing through a coil in an AC circuit is determined by the AC resistance, more commonly known as Impedance (Z), of the circuit. But resistance is always associated with DC circuits so to distinguish DC resistance from AC resistance the term Reactance is generally used. Just like resistance, the value of reactance is also measured in Ohm's but is given the symbol X , to distinguish it from a purely resistive value.

Inductive Reactance which is given the symbol X_L , is the property in an AC circuit which opposes the change in the current.

If either the Frequency OR the Inductance is increased the overall inductive reactance value of the coil would also increase. As the frequency

increases and approaches infinity, the inductors reactance and therefore its impedance would also increase towards infinity acting like an open circuit.



“directly proportional to frequency” and has a small value at low frequencies and a high value at higher frequencies as shown in the graph.

Capacitive Reactance

The purpose of a capacitor is to store energy in the form of an electrical charge, on its plates. When a capacitor is connected across a DC supply voltage it charges up to the value of the applied voltage at a rate determined by its time constant.

A capacitor will maintain or hold this charge indefinitely as long as the supply voltage is present. During this charging process, a charging current, i flows into the capacitor opposed by any changes to the voltage at a rate which is equal to the rate of change of the electrical charge on the plates. A capacitor therefore has an opposition to current flowing onto its plates.

A pure capacitor will maintain this charge indefinitely on its plates even if the DC supply voltage is removed. However, in a voltage circuit fed by AC, the capacitor will alternately charge and discharge at a rate determined by the

frequency of the supply. Then capacitors in AC circuits are constantly charging and discharging respectively.

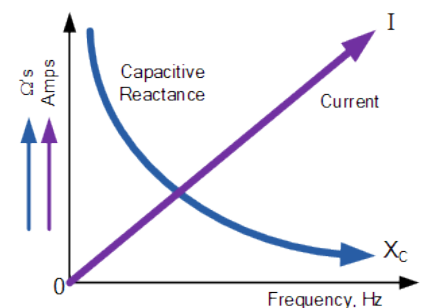
When an alternating sinusoidal voltage is applied to the plates of an AC capacitor, the capacitor is charged firstly in one direction and then in the opposite direction changing polarity at the same rate as the AC supply voltage.

So we now know that capacitors oppose changes in voltage with the flow of electrons onto the plates of the capacitor. Unlike a resistor where the opposition to current flow is its actual resistance, the opposition to current flow in a capacitor is called Capacitive Reactance (X_C) which is measured in Ohms.

Since capacitors charge and discharge in proportion to the rate of voltage change across them, the faster the voltage changes the more current will flow. Likewise, the slower the voltage changes the less current will flow. This means then that the reactance of an AC capacitor is “inversely proportional” to the frequency of the supply.

The value of capacitive reactance and therefore its overall impedance (in Ohms) decreases towards zero as the frequency increases acting like a short circuit. Likewise, as the frequency approaches zero or DC, the capacitors reactance increases to infinity, acting like an open circuit which is why capacitors block DC.

Note that the relationship between capacitive reactance and frequency is the exact opposite to that of inductive reactance, (X_L) we saw in earlier. This means then that capacitive reactance is “inversely proportional to frequency” and has a high value at low frequencies and a low value at higher frequencies as shown.



Using these characteristics we can design ‘tuned’ circuits with capacitors and inductors to pass or block a certain frequency.

The correct answer to both of our original questions is therefore number 1.

~ John VE7TI





At The Last SARC Meeting

October General Meeting Minutes

Wednesday, October 11, 2017

Welcome & Introduction

With 29 members in attendance, President Stan Williams VA7NF opened the meeting at 7:04 pm.

Hui Yee VE7YXG was welcomed back after a period of illness and informed the members that he is waiting for open heart surgery.

OTC Update

John Brodie VA7XB stated that we still await a decision regarding our gaming grant application. A meeting of the OTC committee will be called once we know the extent of all available funds. It was noted that Councillor Mary Martin, who was instrumental in the decision of the City of Surrey to grant our use of the OTC, has returned to Surrey Council from a leave-of-absence. Consideration will be given to a meeting of the Executive with the City to review the status of the OTC including some unresolved issues.

In reply to questions, Stan VA7NF advised that the Flex radio currently on order is the 6600 expected in November and in addition, we currently have a 600 watt Yaesu amplifier which is usable now that all the coax has been upgraded.

Financial Report

Scott Hawrelak VE7HA reported the balance of various SARC accounts, and noted that SARC annual dues are now overdue. He also noted that SARC badges are available for \$4 each or 3 for \$10, and name badges for \$10 each.

Christmas Party

Jinty Reid VA7JMR reported that the Christmas lunch will be in the Oak Room at Newlands Golf and Country club in Langley at 21025 48th Ave on Dec 9th from 11:30 am - 2:30 pm. Cost is \$25 for the buffet and a menu will be forwarded once we have it. SEPARS and LARA will also be invited to enjoy the day with us. Donations for door prize gifts are welcome but 3 door prizes will be purchased. Alcoholic drinks can be purchased. We need a minimum of 60 people but can accommodate up to 70. There may not be a specific vegetarian meal but will be checking with them on the menu options.

If possible please prepay Scott by cash or cheque. [Paypal](#) is available but you need to select the donation category and include a note that it's for the Christmas party. Before the end of October invitations will be for SARC and November onwards invitations will be open for SEPARS and LARA. If you do find out last minute that you can attend contact Jinty. jinty.reid@gmail.com.

Membership Report

John Brodie VA7XB reported the membership as of today is 90 paid members. Scott now has 8 more paid tonight bringing our total to approx 98 paid members and 31 unpaid. Those members who have not renewed by the end of October will be deleted from the membership list. RAC insurance is due by the end of the year. Those who are not RAC members cost the club \$11 to insure whereas RAC members qualify for a much smaller fee.

Contest Group

Sheldon Ward VA7XNL and Anton James VE7SSD participated in the CQ WW RTTY contest at the OTC a couple weekends ago and made approx 400 contacts. John Brodie VA7XB also operated his station with participation from Michael Birtles VE7GMP and Robert Fishwick VA7FMR.

Plaque and certificates were received by the club for the BC QSO party.

JOTA

John Schouten VE7TI gave a report on plans for Scouting Jamboree-On-The-Air on Saturday Oct. 21 from 10 am to 3 pm. He stated that with two different scout groups are expected this year, we would like to have some other activities at the OTC to keep the interest of those not operating,

e.g. a CW demonstration and fox hunt. An email will be sent out to the membership asking for volunteers.

Ham Class Update

John Schouten VE7TI noted that week 6 has been completed with the 8 students attending. There will be one more class and then the final exam on Oct. 24th.

Presentations

There were three presentations (*see next page*) by Dave Thompson, John Schouten and Stan Wiliams.

The meeting was adjourned at 8:43pm.

~ Jeremy VE7TMY
Secretary



The GNU Radio Workshop

Following up on his presentation at the March General meeting, Kevin VE7ZD presented a Saturday morning workshop on GNU Radio on October 7th.

The GNU Radio software provides the framework and tools to build and run software radio or just general signal-processing applications. The GNU Radio applications themselves are generally known as "flowgraphs", which are a series of signal processing blocks connected together in software, thus describing a data flow. As with all software-defined radio systems, re-configurability is a key feature. Instead of using different radios designed for specific but disparate purposes, a single, general-purpose, radio can be used as the radio front-end, and the signal-processing software, handles the processing specific to the radio application.

We started out by building a simple audio signal generator and moved on to a full featured FM broadcast receiver. The hardware tuner is the inexpensive RTL2832U + R820T dongle available on eBay and other sources. With a frequency range of 24 - 1766 MHz it is fully 100% compatible with GNUradio and permits building devices across the ham bands.

The dongle is actually manufactured for receiving TV broadcasts on Asian computers, but for us it means that a cheap \$20 TV tuner USB dongle with the RTL2832U chip can

be used as a software defined radio (SDR). This sort of capability would have cost hundreds or even thousands of dollars just a few years ago. The RTL-SDR is also often referred to as RTL2832U, DVB-T SDR, RTL dongle or the "\$20 Software Defined Radio".

This was an interesting workshop that opens up a world of SDR experimentation. The workshop presentation can be viewed at:
<https://drive.google.com/open?id=0B11aA9vbdaRUcGVxUzNWWellac0E>

Our thanks to Kevin.



November 2017



At The Last SARC Meeting

Three Presentations in October

1

SARC Member Sets UHF Contact Distance Record

Our first October presentation was given By Dave VA7THO. Dave is particularly interested in digital communications on the high bands. One use of APRS is to exchange messages via satellite, sometimes over long distances. Dave set an ISS Digipeater (UHF) distance record recently between himself at White Rock, BC and Jerry W8LR of Middletown Ohio, a distance of 3224 km, about 2000 miles.



They each used a Kenwood TH-D72 and Arrow antenna. The International Space Station digipeater at that time ran at a frequency of 437.550, but has since returned to its usual frequency of 145.825 so their record may be tough to beat for a while.

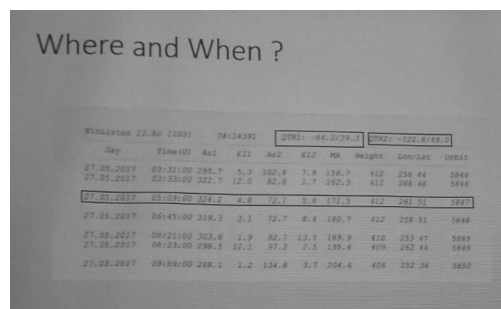
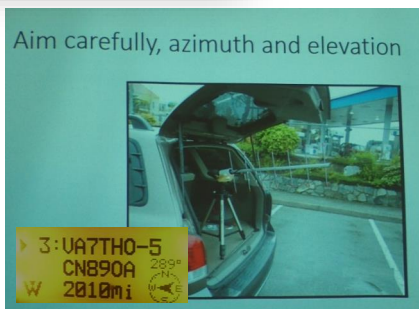
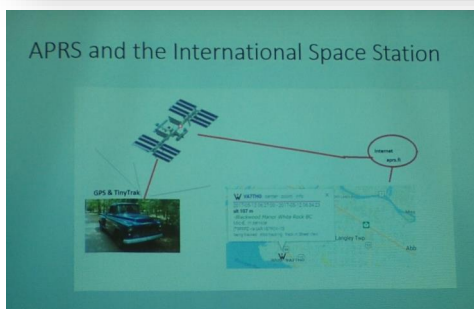
Congratulations on this notable achievement!

For further reading, Dave provided some useful references:

<https://aprs.fi/>

<https://www.amsat.org/satellite-distance-records/>

<http://www.heavens-above.com/>



2

Flex 6600 Internet Access

Stan Williams VA7NF then described our future objective of remotely operating the Flex 6600, which is on order and expected later this year. A discussion followed on the challenges of multiple users attempting to login at the same time, while maintaining users' license permissions and restrictions.

33

Our Renewed Web Presence

John Schouten VE7TI reported on planned website improvements, which include relocating older articles from the ve7sar.net website to <https://ve7sar.blogspot.ca>.

Information which is static and rarely changes will be retained on the original landing page with clear links to our other Internet accounts. Jeremy VE7TMY is currently refining the new main site. SARC's web presence includes not only the website and new blog but also a collection of photos, our popular YouTube videos and our FaceBook and Twitter social media sites.

The blog will reduce the effort to maintain articles and news events on the website. The BlogSpot articles are sourced for the SARC Communicator that is edited by John, plus additional items of interest. If desired, you can subscribe to the blog site and automatically receive new content in your email when it is added.

Also convenient is the ability to search for content by key word or topic as far back as we have been posting to the web. Issues of SARC Communicators as far back as 2010 are also there. Please check it out.



Photo credits: Jeremy VE7TMY

And if you just want to relax with a good book in the on a winter evening, you might want to look for the "New Book of Short Stories Highlights 'Magic of Ham Radio'". It's a new book by prolific, award-winning, and best-selling writer Don Keith who employs short fictional stories to demonstrate what the author calls the "magic" still inherent in the century-old hobby of Amateur (or "Ham") Radio. Details at <http://www.eham.net/articles/397630>

November 2017



Radio-Active

Geoff Higginson VA7HIG

Profiles of SARC Members

On the Water, On the Street, From the QTH

Born at Burnaby General, raised first in Newton, attending old Newton Elementary, Bruce "VA7CBE" Elrick moved with his family to Winnipeg for a couple of years and then to Regina where he finished high school. Returning to Surrey Bruce spent his off hours from working at Scott Paper in New Westminster recreating at Crescent Beach, eventually buying and settling in the area.



Bruce Elrick (VA7CBE)

Bruce has been Radio Active for years on the peninsula, first with the Coast Guard Auxiliary out of Crescent Beach (Including a stint as Unit Leader and Media Liaison Officer), and later with the RCMP White Rock Detachment as an Auxiliary Police Constable. As part of his years of community service VA7CBE regularly

operated on Marine and RCMP Land Mobile communications as part of his duties with the Coast Guard and the Mounties.

He always loved the para military training with both services recalling fondly a few of his favourite moments like being a test subject for RCMP tear gas training at a media event and the most gratifying of all his maritime training at Coast Guard Marine Station Bamfield on small and fast rescue craft.



Retired from Scott Paper (now Krueger Paper) Bruce has three adult daughters and a full house of extended family sharing his digs with his bride (a switchboard operator at the Surrey RCMP detachment), canine "Alice" the Bull Terrier, his eldest daughter and three grandchildren, making it a bit challenging to find space and time for ham radio.

Basic with Honours since last fall, VA7CBE took his SARC Training Class with Stan VA7NF and John VA7TI and has been steadily gathering equipment for his base station, mobile and portable operations, checking in to as many nets as he can while learning local repeater frequencies, tones, and net times. He notes that many of the nets happen at the same time and day so it is difficult to hit them all. He has had a great time in particular with QSO's on the Salt Spring Island Repeater.

Bruce is usually with his Baofeng UV-5R with after-market Nagoya NA -771 whip antenna and "Elmer" approved ground plane "wire" attached to the chassis of the radio. Bruce has acquired an ICOM IC-746 with built in tuner and a stand-alone Diamond SX-600 SWR Meter from an American Amateur via Craigslist. Rounding out his shack radio operation is a marine radio left from his coast guard days to monitor coast guard and other marine radio channels.

Getting out should be no problem as aside from his portable/mobile mag mounts Bruce has acquired a GV5R at the New West Club Swap, a sweet tower section from John VA7XB, who also helped him



program his radio. So, with a Comet GP1 for 2 metres and 70 cm's on the lattice mast, the GV5R, an M2 Enterprise Magnetic Loop, a monster 14 foot 11 element yagi and a 60 foot extendible mast tower all that's left is enough coax to put his HF show together.

Bruce has had a fascinating life. Aside from his community professional volunteerism, a community icon on the south Surrey-White Rock Peninsula, he has been deeply involved with vintage cars and racing and a love for classic, rare motorcycles. He also stepped up to the plate to donate one half of his kidneys when a friend was in need some time back. In the end he has both kidneys but the thought and prep he had to go through reflect the altruistic "Ham Spirit" that Bruce brings to the hobby we all love.

~ Geoff Higginson

SARC Christmas Luncheon

You are cordially invited to the Newlands Golf & Country Club (Oak Ballroom) at 21025 48th Ave., Langley on the 9th December 2017 from 11:30 am until 2:30 pm.

The menu will be a special Christmas Buffet. Liquor will be available for purchase.

Pre-pay is required at \$25 per person for members & guests (please pay to Scott Hawrelak by cash, cheque or via Pay Pal)

We would like to extend this invitation to SEPAC, Langley Amateur Radio Club and the White Rock Amateur Radio Club.

Awards and door prizes will be part of the event.

~ ~ ~

RSVP jinty.reid@gmail.com by November 25th

November 2017

Surrey Emergency Program Amateur Radio



The SEPAR Report

Roger Andrews VA7VH - SEPAR Coordinator

November Update

Since the last Communicator, 30 days ago, it's been a busy time for SEPAR.

LMERC Meeting

On September 27th John (VE7TI) and I attended the first LMERC (Lower Mainland Emergency Radio Coordinators) meeting held at the North Vancouver EOC. There was a good showing from the different cities/municipalities of the Metro Vancouver (Lower mainland) area.

Cowichan Valley Regional District Emergency Telecommunications Coordinator Paul B. Peters gave an excellent presentation on the early failures, leading to the impressive successes which his group has attained. The most impressive success is that out of 30 volunteer, he will see 20 of them on a regular basis. Of course all of his volunteers are vetted and made aware of the expectation that are put upon them on the outset of their application. One of those requirements is that members must train to a certain standard quickly. ICS-

100 (Incident Command Structure) is required and that course is freely available online to everyone though FEMA (The United States Federal Emergency Management agency). While this is a USA course, ICS is the same in Canada as it is in the USA. I took that course on my own within the first couple weeks of joining SEPAR. If you have not already taken it, you should: Register here:

<https://training.fema.gov/apply/#HowToLS>, then take the course here:

<https://training.fema.gov/is/courseoverview.aspx?code=IS-100.b>

LMERC will present to the REPC (Regional Emergency Planning Committee) and request to be recognized as a REPC committee. We will then be able to meet again regularly and hopefully improve our emergency preparedness.

EOC Workshop

On October 11th the Surrey Fire Service invited 2 SEPAR members to attend their EOC (Emergency Operations Centre)



LMERC Meeting

Workshop. That was to be Stan (VA7NF) and I but the morning of the workshop I got ill and so Stan had to go it alone. I'm looking forward to attending their next one. By all accounts, this was an excellent training opportunity and I'm sad to have missed it. Lucky Stan!

Earthquake Simulator

On October 15th the Surrey Emergency Program (SEP) arranged to have an earthquake simulator at the Guilford Town Centre parking lot from 10:00 hrs to 16:00 hrs. SEPAR was there with our Communications Trailer and several of our members. SFS Assistant Chief Shelley Morris has said that next year she plans on making it even more attractive by possibly bringing in a food truck. Everyone likes food! If we could get them to arrange for free food for the volunteers I bet we'd have a massive turnout of volunteers! The interesting part of the display for me was the earthquake simulator - "Quake Cottage". The simulator was run at an 8.0 magnitude quake and I can't imagine the devastation we would be in for if the quake we are waiting for is even close to that number.



Great BC Shakeout

On October 19th at 10:19 the Great BC Shakeout was held and SEPAR participated by taking checkins on the VE7ICM D-Star repeater, Winlink, Simplex and of course the VE7RSC (147.360+) Surrey repeater. Most of the checkins occurred on VE7RSC (22), 6 on simplex and a few on each of Winlink and D-Star. Those numbers aren't bad, considering it's a daytime event and people are working, but I expected a few more on Winlink. Maybe next year we'll add HF and shoot for a wider area.

JOTA

On October 21st SEPAR and the Surrey Amateur Radio Club jointly assisted local Scouts (Scouts Canada) with the annual Jamboree On The Air (JOTA). John Schouten (VE7TI) coordinated this event and we had fun getting young boys and girls on the air. The kids all seemed to enjoy themselves. There was a foxhunt planned but the weather literally dampened it and it did not occur.



Kalmar Social Reminder

The Surrey weekly social gathering is on Saturday at the Kalmar Restaurant at 80th and King George Boulevard between 8 and 10:00 am. You don't have to be a SARC member to participate. Bring your significant other, bring your family, see old friends and have fun.

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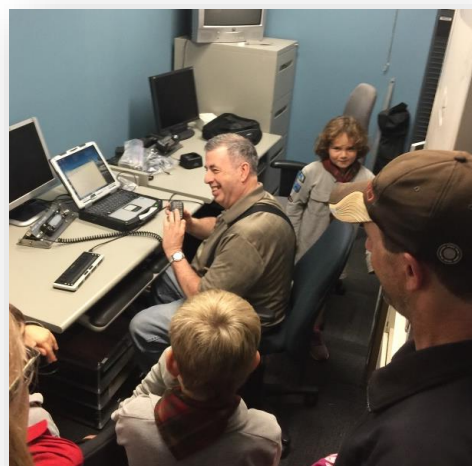
Robert (VA7FMR) gave a basic introduction to radio. John (VA7XB) taught a micro course and practice in Morse code (The kids now know more than I do!) Dixie (VA7DIX) and I (VA7VH) helped the kids talk to each other on portable radios. Rob (VE7CZV) made contacts with Echolink, IRLP and Digital messaging and Stan (VA7NF) used his SDR radio to attempt HF contacts. Scouts Canada is already making plans for this event next year and it will be our honour to participate in the event again, if they will have us.

Weekly Nets

Every Tuesday evening at 1930 hrs (7:30pm PDT) we start a ½ hour NET on a local repeater provided by the Surrey Amateur Radio Club (SARC) on 147.360 MHz +600kHz and a tone of 110.9. There may be a simplex test or a test NTS message transmitted during the NET at the Net controllers discretion. This is an excellent opportunity to practice sending and receiving this form of messaging. Besides, it adds a little spice to the regular check-ins on the net. Please join us. NTS Radiograms can be found on the SEPAR website here, or, if you would like a fillable PDF that you can enter on your computer, you can get it from here.

Thursday nights at 19:30 hours, This Net has changed! We are no longer doing a regular 2 meter simplex Net on this night. Any plans for Thursday night will be announced on the Tuesday before. This night will now be used for optional tests. For example NTS Digital exchanges, 6 meter, 2 meter 60 cm and 220 Nets. If someone wants to do a particular net on a Thursday, then please announce it on the Tuesday before.

~ Roger VA7VH



Above: Robert VE7CZV on VHF at the SEPAR station.

Below: Dixie VA7DIX and Roger VA7VH demonstrating the use of a VHF handheld.



A BC wildfires postscript:

An RCMP radio repeater station, right, survived a fire in north-central BC, while another radio repeater, constructed of different materials, did not survive.



Emergency Comms

Ham Radio Making A Difference

Puerto Rico: When Smartphones Fail Students Help

When smartphones fail: How students in a ham radio club are helping Puerto Rico

In the age of smartphones, Snapchat and WhatsApp, a group of students in Queens, New York, are using a more traditional form of communication to help out the people of Puerto Rico.

It's been two weeks since Hurricane Maria devastated the U.S. territory, and more than 90 per cent of the island is still without electricity. The lack of power and Wi-Fi is making it difficult for communications across Puerto Rico, whether it's family members trying to contact loved ones, or aid agencies trying to share messages related to health and welfare.

With phone lines down and cellphone reception spotty, the American Red Cross and other aid groups have reached out to amateur (or ham) radio operators for help. Ham radio can be set up anywhere and can communicate around the world. While some ham radio operators have been recruited to work within Puerto Rico, back in Queens, the students at the Garden School are helping out from the tiny room that houses the Amateur Radio Club. Anyone can email the school and the club members will then share that message via radiogram, and that message is then relayed to ham radio operators in Puerto Rico.

How the Garden School got involved

The Amateur Radio Club started about a year ago, says teacher John Hale. It was part of a process of trying to teach the students about how to work with radios.

"The next thing, if you're part of the radio community with amateur radio, is to help people in need," says Hale.

"They're helping an individual attempt to make contact with one of their family members." - John Hale, teacher, Garden School

When Hurricane Irma hit the Caribbean and Florida Keys in September, Hale realized that there was a need for ham radio and set to training the students on how to help. "We slowly started teaching the kids about how to do a radiogram and start a relay message that'll get down to wherever they need to go," explains Hale.

"When we have a disaster they do food drives, they do clothing drives, they do money drives to raise money. This lets them try to work with a person one-on-one ... now they know they're helping an individual attempt to make contact with one of their family members," says Hale.

Student Jasmine Petrov agrees that the individual contact is rewarding. "What this gives is an actual personal touch... which I think makes it so much more special," says Petrov.



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Club member Lea Medina says that reaching out to people in Puerto Rico is just "the right thing to do."

"If I were one of these people I, of course, would be as devastated as they are. And I decided to go and join this simply because it has to be done,"

Medina explains. "You can easily relate to these people if you just think about how it must feel if you're not able to talk to the people who you love and care about."

Medina says she does not know anyone in Puerto Rico. "But I know what it's like to be separated from someone you love," she says.

What it means to the students

"The most profound message that I've received so far is about this daughter who's really desperately wanting to check on her father and her mother," says Medina. "She asked us to make sure that they know that she loves them, she cares about them, and she wants to know for sure that they're alright."

"It's very overwhelming to be part of this emotional connection." - Jasmine Petrov, Garden School Amateur Radio Club

Petrov is struck by the sameness of the messages they're being requested to send. "Seeing how all of these people trying to send pretty much the same care messages, of: 'Are you OK?' And just asking their relatives, their friends of their well-being," explains Medina. "All of that together, it's very overwhelming to be part of this emotional connection."

Petrov says she joined the Amateur Radio Club because she was interested in learning how ham radio

worked. She thought it would simply involve school radio competitions. "I never thought that it would become so personal ... it became so much more," she says.

Medina says her interest in ham radio goes back to the way it was used in the 1930s and 40s. "I particularly loved the field radio operators in World War II and I found their job to be one of the most important. Because of those people there were countless lives that were saved by dropping supplies in the right places," says Medina.

Medina reiterates that sending messages to Puerto Rico is just the right thing to do. "It gives me a sense that there actually is good in this world," she says. "You see that somebody's going through something terrible. You want to do something good in order to alleviate their sufferings, and when you transmit this message you have to think about the people on the other side of the screen and on the other side of this paper."

"These are people's lives at stake," says Medina. "And they're people who are just trying to desperately talk to other people because there's no way else."

Hale thinks the radiograms are a great experience for the students, in addition to being an important lesson to the general public.

"Amateur radio can help in the time of need."

~ CBC News



"You can easily relate to these people if you just think about how it must feel if you're not able to talk to the people who you love and care about."

- Lea Medina, Garden School Amateur Radio Club.



Scouts Jamboree On The Air

John Schouten VE7TI

Surrey Participated In This International Event

The Jamboree on the Air, or JOTA, is an annual Scouting event that uses amateur radio to link Scouts around the world, around Canada, and in your own community. Held on the third full weekend of October each year, this worldwide jamboree requires no travel, other than to a nearby amateur radio shack, Scout meeting place, camp or community center.

On Saturday, October 21st the 60th annual Jamboree On The Air took place. Surrey was represented by seven operators and five stations from the Surrey Amateur Radio Club and the Surrey Emergency Program Amateur Radio at our Operations & Training Centre.

JOTA is the largest Scouting event in the world with over one million Scouts participating across 150+ countries. They have an opportunity to discover the exciting communications possibilities that Amateur Radio offers and, in doing so, make contacts with other Scouting groups around the world. See jotajoti.info/

JOTA started in 1957 with the World JOTA Bureau located right here in Ottawa, making this year's event the 60th annual JOTA. In 1997, communicating through the internet was added, and this was called Jamboree on the Internet or JOTI for short. Both annual events are sanctioned and sponsored by the World Organization of the Scouting Movement.

The Scouts Enjoyed The Experience

Various ages and levels of Scouts circulated through five stations including hands-on tutorials on:

- Basic Radio Theory
- Morse Code
- VHF/UHF including IRLP and Echolink
- HF (Shortwave)
- Handheld Radio practise

They spoke with stations including London, England and the United States. Although for some it was the first time ever handling a mic, most soon warmed up to the experience.

A sixth station was planned with a fox hunting (ARDF) setup but the 'Pineapple Express' brought heavy rain, and with it little desire to be outside.

Next year it is on the weekend of October 19-21 and there may be an opportunity to operate from Camp McLean, a large Scouting facility in south Langley. This would provide radio exposure to more Scouts but would also involve a greater effort as a field station would have to be setup.

Let's hope it's a dry weekend!

~ John VE7TI



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North Shore Amateur Radio Club



North Shore ARC

Latest News

The following from the North Shore Club:

The November TechTopics meeting will be on HF mobile antenna installation options and the topic will be "HF Mobile Antenna Location: the use and effectiveness of mobile whips".

February will feature the design of dipole antennas using traps, and will analyze the results of an installation using impedance meters and Smith Chart to determine the antenna impedance at the feed point.

Mel Bishop VE7BMS—SK: Details when they become available.

The Techie Corner

There is a new version of WSJT-x available. Check details at http://physics.princeton.edu/pulsar/k1jt/Release_Notes_1.8.0.txt and download the new software at <http://physics.princeton.edu/pulsar/k1jt/wsjsx.html>

ARLS010 Chinese CAS-4A and CAS-4B Amateur Radio Satellite Transponders

The Amateur Radio linear (SSB/CW) inverting transponders on the CAS-4A and CAS-4B satellites were activated on October 18. CAMSAT's Amateur Radio payloads piggybacked on the optical remote-sensing micro-satellites OVS-1A (CAS-4A) and OVS-1B (CAS-4B), launched on June 15.

CAS-4A (call sign BJ1SK) has a CW telemetry beacon on 144.855 MHz, and 4.8 kB GMSK telemetry on 145.835 MHz. The uplink is 435.220 MHz, the downlink is 145.870 MHz (20-kHz passband).

CAS-4B (call sign BJ1SL) has a CW telemetry beacon on 145.910 MHz, and 4.8 kB GMSK telemetry at 145.890 MHz.

The uplink is 435.280 MHz, the downlink is 145.925 MHz (20-kHz passband).

Note from Keith VE7KW: I was quite pleasantly surprised to be able to copy the BJ1SL beacon for 8 minutes of its 11-minute pass at 0618-0629Z October 22. I used the IC7000 in the truck with the mobile 5/8 antenna under the car port in bear hollow! Now all I have to do is figure out how to get through the transponder.

For the aspiring Amateur: Here is a website that introduces our Hobby to the newcomer:

<https://www.autodesk.com/products/eaagle/blog/beginners-guide-ham-radiomake/>

Electronic Recycling

Trade, sell or offer electronic items for free. Just email your item to newsletter@ve7nsr.ca and it will be advertised in their weekly newsletter.

NSARC Club Meetings

General Meetings: Held 7:30pm, 1st and 3rd Thursday of each month at the North Shore Emergency Management Office meeting room, 147 East 14th St., North Vancouver, B.C. V7L 2N4



TechTopics (September to May): Held 7:30pm, 4th Thursday of each month at the above venue.

Club Repeaters

VHF: VE7NSR - 147.26MHz (+600kHz), output transmits CTCSS 156.7 Hz.

UHF: VE7NSR - 443.200 MHz (+5 MHz) - linked to VHF.

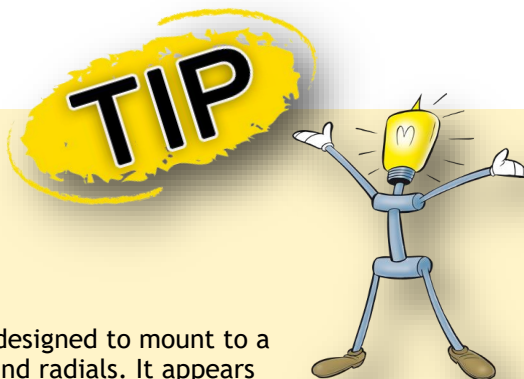
UHF: VE7RNV - 444.950 MHz (+5 MHz) - IRLP Node 1015.

CLUB IRLP NODE: 1015, via VE7RNV Repeater - 444.950 MHz (+5 MHz)

Club Net

7:00pm each Tuesday on the Club Repeater System VE7NSR - Frequency: 147.26MHz (+600kHz).

~ George Merchant VE7QH



A Radial Plate For Cheapskates

A well-known ham antenna manufacturer sells a stainless steel plate that's designed to mount to a vertical antenna's support mast and provide connections for at least 60 ground radials. It appears to be a well-made product and has gotten good reviews on eHam.

However it's rather expensive and considerable overkill for my Inverted-L installation, so I set out to look for something that could serve the same purpose at a lower cost. What I ultimately found is remarkably cheap, and should meet the needs of anyone who doesn't have the time, real estate, or inclination to put down more than 30 ground radials. What is it? It's nothing more than a replacement kitchen sink strainer that you can buy at Home Depot or Lowe's for about \$2.00. It's made from stainless steel and is "pre-drilled" for 10-24 size screws. You can readily install ten screws and nuts in the outermost ring of holes, and another five in the next ring. Install two solder or crimp-type terminal lugs under each nut and there's your 30-radial capacity. Furthermore, as shown in the photo, the strainer's center hole is large enough to fit over a copper-clad ground rod. You just have to remove the rubber stopper and pull out the metal center stem.

In my installation, each screw is fastened to the strainer with a compression lock washer and nut. Then the radial lugs are placed over the nut and secured by a second nut. To prevent "galling" or seizing up of the stainless hardware, I placed Noalox grease on the screw threads. I also placed some grease on the flat surfaces of the lugs. Home Depot and Lowe's carry Noalox in the electrical section.

Depending on how many sets of stainless hardware you buy, the total cost for the strainer, the stainless steel screws, nuts and washers, and a small tube of Noalox will be under \$10 to maybe as much as \$16. For that price there's no excuse for not sprucing up (and adding to) your vertical's radial system.

~ K3AN



Richmond Amateur Radio Club



Richmond ARC News

'Discover Amateur Radio' Seminar

~ Richmond, B.C.

The Richmond Amateur Radio Club (RARC) will be hosting, for its second year, a day of presentations and panel discussions on topics of interest for radio Amateurs and (non-licensed) individuals to learn more about the Amateur Radio hobby. The informal seminar will take place on Sunday, November 12th at the Steveston Community Centre in Steveston Village, Richmond at 4111 Moncton Street (near No. 1 Rd.) with sessions running from 9 AM to 4 PM. Admission is five dollars to cover room rentals and beverages.

The 'Discover Amateur Radio' seminar introduces attendees to a broad range of interesting topics in the world of Amateur radio with presentations by subject experts on activities like ARDF (Amateur Radio Direction Finding, or fox hunting), SOTA (Summit on the Air), APRS (Automatic Packet Reporting System), and digital radio. There will also be discussions on how to purchase your first (or second) radio, setting up a radio station, antenna design and location, building a radio go-kit, and emergency communications.



'Discover Amateur Radio' not only addresses a common question from radio course graduates, "What do we do after receiving our Basic qualification?" but also provides a venue for radio Amateurs to come together to share information and knowledge on the many interesting aspects of the hobby.

RARC president, and event organizer, Urey Chan, VE7URE says that, "events like 'Discover Amateur Radio' is a great way to showcase Amateur radio to the general public and bring public awareness to the role Amateur radio plays in supporting the local community."

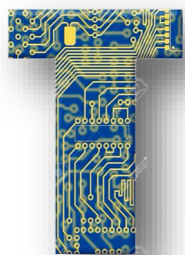
Updates on the radio seminar will be posted at: www.richmondarc.ca

About Richmond Amateur Radio Club - RARC is a registered BC Society of volunteers to promote the interests of Amateur Radio, assist in the provision of communication services in the event of an emergency, and provide communications for public service events as requested. RARC is a supporter of Emergency Management BC and City of Richmond Emergency Programs, and an affiliated club with Radio Amateurs of Canada. Programs for RARC are partially funded by grants from the City of Richmond and Province of BC. Additional information about RARC is located at: www.rarclub.ca

For questions about the 'Discover Amateur Radio' seminar or RARC, please contact:

~ Urey Chan, VE7URE
President, and Public Relations

info@rarclub.ca



Tech Topics

Virginia RACES

Hamstick Dipole As A Practical and Portable Limited-Space HF Antenna

In the September 2017 Communicator Robert VA7FMR wrote an article about successfully using Hamsticks as a dipole apartment antenna. As a follow-up, here is an article that expands on the subject.

When setting up portable or space restricted antennas, stand-alone mobile whips are often avoided due to the lack of a good grounding method. Stringing ground radials or using a ground rod in the field or the attic becomes increasingly difficult. While using one mobile whip by itself requires a good ground or counterpoise (usually the car body), a pair can be operated as a dipole. Lakeview (www.hamstick.com) makes a universal dipole mount. They also supply quick-disconnect fittings with 3/8 X 24 threads which allow push-and-twist assembly of the mobile whips to the dipole mount within seconds for those of us wishing to make a quick setup or band change without tools.

Pro-Am makes Valor HF linear loaded whips that disassemble in half using a single threaded nut. This has the advantage that tuning adjustment is not lost when the antenna is disassembled. Hamstick whips have two small set screws that must be loosened to remove the stinger portion. Both brands cost about \$24 per whip. The eight-foot whip disassembles to two four-foot pieces. Each whip is designed to cover one amateur band and can be adjusted from the phone to the CW sub-bands by changing the stinger length.

The 2:1 VSWR bandwidth is narrower on the lower bands since the whips are proportionally smaller compared to the longer electrical wavelengths.

The 20-meter whips measured about 100 kHz, the 40-meter at 40 kHz and the 75-meter about 20 kHz. If your HF rig has a built-in tuner, the useable frequency span approximately doubles without significant loss of antenna efficiency.

An on-the-air comparison was made between the portable whip dipoles up 20 feet and half-wave dipoles for 40 and 75 meters. On 40 meters, two whips were about 1.5 S-units (about 10 dB) below the half-wave 40-meter dipole. Two 75-meter whips were almost three S-units (about 18 dB) below a half-wave 75-meter dipole (no wonder, since a 75-meter half wave dipole is 130 feet compared to the 16 feet of the two whips). On 20 meters, we were surprised to see only about one S-unit (6-dB) difference from a G5RV dipole antenna. Getting the portable whip dipole higher than 20 feet would also improve efficiency on the lower bands.

This portable dipole system was used to make contacts with European Russia on 20 meters from a condo in San Luis, CA as well as by Ed to San Juan Puerto Rico, Prince Edward Island and Mexico City from the Pentagon south parking lot in Washington, DC during the 2000 Marine Corps Marathon.

A pair of Radio Shack 10-foot TV mast sections supported my antenna parallel to the plastic rain gutter on the corner of the house. Bungee cords were used to hold it in place. Raising and lowering the antenna and masts to change bands can be done by one person, but two make the job easier when the wind is blowing.

Ed uses four 5-ft. mast sections for ease of storage in a vehicle.



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He recommends that whips all be equipped with quick-disconnects, be color-coded by band and stored with a 4' ground rod in capped 3" diameter PVC pipe. ARES / RACES may need to set up in a paved area such as an EOC parking lot. To do so bolt a folding 3-ft. TV roof tripod onto a triangular support frame constructed of three 5' pieces of 1" angle iron, using 1/4-20x3" bolts and wing nuts. Similarly attach a length of 2x6" across the open end opposite the TV tripod. Park a front tire of your vehicle on the board or place sandbags across it to provide wind stability. All stash easily in an SUV. With practice, you can erect the antenna in 5 minutes!



A variation provides dual HF band coverage with a single coaxial feedline. Two hamstick dipole mounts were bolted together with their center-isolated posts connected together using #12 gauge wire. Two sets of whips for 40 and 75 meters were assembled. Coax was attached to one of the mounts. There is minor interaction between the whips, although the #12 gauge wire looks slightly capacitive.

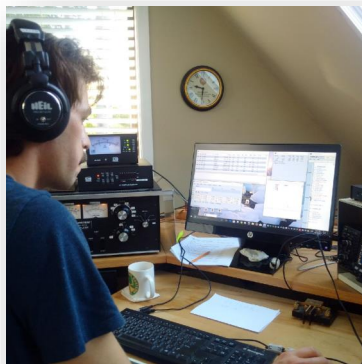
Connecting the coax to the lower band dipole mount reduces the effect of the #12 gauge wire. A 25-foot length of coax was coiled at the base of the mast as an RF choke to reduce any stray RF from coupling onto the shield. The same could be accomplished by using ferrite beads on the coax feed near the dipole mount.

Either arrangement provides a viable, convenient, portable, horizontally polarized, high-angle antenna for NVIS operation on 40 and 75 meters. It is also a directional antenna on the higher frequencies, which is an effective performer for those who live in antenna restricted communities.

As with any transmitting antenna, be sure the radiating elements, especially the stinger end sections, are kept safely away from bystanders.

~ Steve Cuccio, NB30, NM, Old Dominion
Emergency Net and Ed Harris, KE4SKY, VA
State RACES Training Officer

CQ Worldwide SSB Contest—October 28-29th



It was a busy weekend, as stations operated by at least three SARC members, with multiple operators, participated in the largest Amateur Radio competition in the world. Over 35,000 participants take to the airwaves on the last weekend of October (SSB) and November (CW) with the goal of making as many contacts with as many different DXCC entities and CQ Zones as possible.

Separate stations operated by John Brodie, Fred Orsetti and Sheldon Ward were active for much of the contest operating as VE7SAR, VE7SRY and VE7RAC respectively. In the case of VE7RAC, operated as part of the RAC Canada 150 program, we reached every continent but Antarctica and logged 1,820 contacts for a respectable score of 714,054 points.

There's a video at <https://youtu.be/-CCnHHgmXv0>

Left: Rookie Contester Michael Birtles VE7GMP operates CQ WW at John Brodie's station



A Course Update

John Schouten VE7TI

The Latest Course and New Hams

The Surrey Fall Basic Course has now wrapped up. It was a smaller class than usual, but the fall classes are always smaller than in the spring.

We started with eight students on September 5th and lost one due to a medical issue. That student will be picking up the course again next spring. It was a pleasant mix of ages and interests, which always makes the class more interesting.

As I was away for most of September, Stan VA7NF taught two of the basic electronics and components lessons and carried on with propagation, antennas and receivers-transmitters. In October we finished off with radio regulations (up to 30% of a typical exam), interference, safety, operating procedures, and station assembly and operation.

From past experience, we always advise the students to keep up with pre-reading and complete the practice exams as they go (see the recommended resources below). We use the cloud to provide supporting documentation and weekly reading assignments.

The course and [Coax Publications](#) student manual is augmented by plenty of multimedia content and demonstration to assist the learning process. An optional antenna workshop, where the students build a dual-band antenna and tune it for lowest SWR, is offered as a Saturday morning workshop along with an opportunity for participants to get some hands-on radio time to bring home the concepts taught in class.

As always, We would like to thank the Surrey Fire Service for the use of their well-equipped classroom; and I'd like to personally thank my co-instructor Stan Williams VA7NF for his time. I also want to thank John Brodie VA7XB for his support as course coordinator. John looks after all the registrations, book ordering, student needs and refreshments. Thank you.

We look forward to the next course tentatively scheduled to start Tuesday, April 3, 2018. If you want to brush up, move to an Honours Basic, or know someone who does, please contact John via va7xb@rac.ca

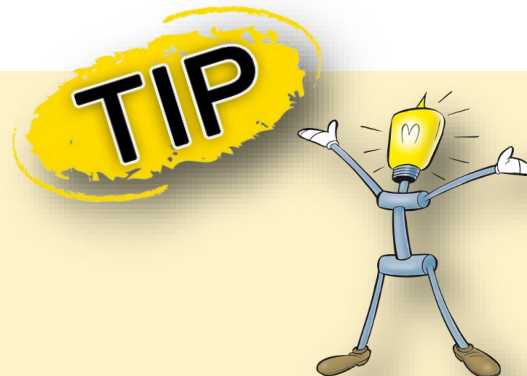


Above: The Saturday workshop at the OTC

Study Links

Whether you are new to the hobby or brushing up on skills, you should find these study links helpful:

1. RIC-7 is the entire up-to-date Industry Canada (IC) Basic Question Bank. <http://tinyurl.com/CanadaBasicQB>
2. There is a RIC-7 that has some explanations along with the questions. [RIC-7 2014rev08.05 with explanations.](#)
3. The Amateur Radio Exam Generator is at: https://www.ic.gc.ca/eic/site/025.nsf/eng/h_00040.html
4. The ExHaminer Study software for Windows is at: <https://wp.rac.ca/exhaminer-v2-5/>
5. The Ham Study website has a flash card approach to learning the Question Bank, both Basic and Advanced. It is at: <https://hamstudy.org>



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SARC CLUB EXECUTIVE 2017-2018

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Bill Gipps VE7XS

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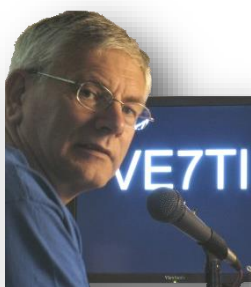
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QRT

John Schouten VE7TI

ICBC Ham Plate Woes

Two recent emails revealed a possible problem with registration and renewal of 5 character (also known as 2-letter call sign) BC Amateur Radio vehicle licence plates.

The first Amateur spent time last week attempting to renew his car insurance and registration with his VA7-- Amateur Radio plates. It became apparent that there was a problem with the new Insurance Corporation of British Columbia (ICBC) computer system accepting five-letter/number registrations. The option presented to him on Saturday, the last day of his insurance coverage, was to relinquish his VA7-- plate and accept a new plate and sticker that had been prepared. Unwilling to relinquish the VA7-- plate, his broker agreed to issue a three-day temporary permit to give more time to resolve the issue, on the condition that he remove the VA7-- plates from his car and display the temporary permit in its place. Inquiries during the weekend indicated that he was not alone in this issue. Some brokers had found a solution, but regrettably some BC Amateurs had given up their "call sign" plate and accepted a regular plate in return.

The following Monday he spent a significant amount of time waiting on hold to contact an ICBC agent at their head office. This was a specialized problem, and by the time he found the department responsible, the staff had gone home for the day. The following day he was able to contact someone in the Personalized Plate department (604 661 2267) and they reassured the Amateur that there was a temporary work around. ICBC had an outstanding trouble ticket to resolve the issue with their IT staff, but it was not yet actioned. ICBC asked him to contact his broker, and have them contact ICBC directly to reissue the VA7-- plate. Meanwhile his broker called him, prior to their office opening. The broker had also taken the time and trouble to find a solution. His VA7-- plate is now valid again with a new sticker for 2017/18 but unfortunately the ICBC system went down during the renewal process and the broker was unable to print any paperwork.

He commented that it was surprising how many people were completely unaware of the significance of an Amateur Radio vehicle license plate.

The second incident involved a long-time Amateur with a similar experience. He has had a ham plate since about 1965 with never a problem. In October 2016, he bought a new used car and wanted to trade in his weathered plates for new. When the Insurance agent called ICBC, he was advised that new plates could not be issued for at least 18 to 24 months. As his insurance was expiring, he had no option but to surrender his plates. Upset by this action, he went on-line to ICBC, found a Complaints page and asked why was he not able to register his callsign plate, or receive new ones for years. Not expecting an answer, he received a phone call from ICBC within three days was advised to go back to his Insurance agent in about five days, where he could pick up his new plates! Which he did... go figure.

This year, October 2017, renewal was again due so he went to his Insurance Agent on a Friday. Crisis! ICBC could not proceed with the renewal as the ICBC system would not accept the 5 digit plate number, VA7..., expiring the following Monday. Weekends are not work days for ICBC, but he was advised it would be resolved by Monday. The problem not having been rectified, he went home, and took the car off the road. He borrowed his wife's car on Tuesday and visited his broker. Fortunately the Agent was very good and worked with ICBC right then, while he was there, and was able to complete the renewal.

Hopefully, this note will encourage other BC Amateurs to persevere with their broker to retain their five-letter/digit call sign vehicle plate while the problem with ICBC's computer exists.

I Wonder what will happen in October 2018?

~ John VE7TI
from information provided by
Al Munnik, RAC Director BC/YK



It's November

The November 8 meeting will feature "Magnetics, Ferrites Beads and Baluns" authored by John White VA7JW in 2011 and presented by Stan Williams. Alternate titles could be "Noise suppression on antenna systems" or "Keeping RF out of the Shack".

SARC has procured, at wholesale prices, three different styles of Fair-Rite type 31 beads. These styles are OTC deployed and now available for club member purchase. Time permitting expect a slide show of OTC deployment, ferrite pricing, and discussion of potential club bulk purchases.

This should be of interest to VHF or HF base stations owners. Given there are many sources of interference both out and inside our homes, ferrites are a component that should be kept in mind. This is an opportunity to learn much more about them.

Keep up with the latest news: ve7sar.blogspot.ca

SARC hosts an Amateur Radio net each Tuesday evening at 8 PM. Please tune in to the VE7RSC repeater at 147.360 MHz (+600 KHz) Tone=110.9, also accessible on IRLP node 1736 and Echolink node 496228.

On UHF we operate a repeater on 443.775MHz (+5Mhz) Tone=110.9 or IRLP Node 1737.

	SARC Net 20:00 Hrs
1 st Tuesday Standby	Drew VA7DRW Dixie VA7DIX
2 nd Tuesday Standby	Jinty VA7JMR Sheldon VA7XNL
3 rd Tuesday Standby	Rob VE7CZV Vacant
4 th Tuesday Standby	Kapila VE7KGK John VA7XB
5 th Tuesday Standby	Robert VA7FMR Vacant
Want a turn at Net Control? Contact the SARC Net Manager	

Down The Log...

SARC Monthly Meetings

2nd Wed. (Sept-Jun)
1900 hr at the PREOC
Emergency Mgmt BC
14292 Green Timbers
Way, Surrey, BC

Weekly Club Breakfast

Saturday at 0900 hr
Kalmar Family Restaurant
8076 King George Blvd.
Surrey

SARC Net

Tuesday at 2000 hr local
on 147.360 MHz (+)
Tone=110.9

SEPARS Net

Tuesday at 1930 hr local
on 147.360 MHz (+)
Tone=110.9

VE7RSC Repeaters

2m: 147.360MHz+
Tone= 110.9Hz
IRLP node 1736
Echolink node 496228

1.2m: 223.960 Mhz -1.6
Tone=110.9

70cm: 443.775MHz+
Tone= 110.9Hz
IRLP node 1737



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These are suitable for sewing on a jacket, cap or your jammies, so you can proudly display your support for the club.

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